

In the Claims:

1. (Currently Amended) A surgical reamer for cutting a bone socket, comprising:

a) ~~a cutting structure~~ a hollow dome comprising:

i) a dome portion of a hemisphere extending from an apex to a lower edge, the dome portion being rotatable about a longitudinal axis that is perpendicular to a theoretical equatorial plane of the hemisphere and that passes through the apex of the dome portion, wherein the dome portion has ~~and having a domed shell portion with~~ an outer surface presenting multiple cutting sites comprising apertures suitable for passing debris into a cavity defined by an inner surface of the ~~shell portion~~ dome where the debris may accumulate; ~~the shell having a static insertion profile being defined by a~~

ii) at least two opposed first curved edge portions of the lower edge residing on the theoretical equatorial plane, wherein a second theoretical plane intersects the dome portion along the longitudinal axis and along the first edge portions residing on the theoretical equatorial plane; ~~portion generated about a first radius with a center that lies on the axis and~~

iii) at least two ~~[[a]]~~ second edge portions of the lower edge spaced from the theoretical equatorial plane toward the apex, wherein at least one of the second edge portions resides on opposite sides of the second theoretical plane with at least two of

the second edge portions being disposed between and connected to two of the first edge portions; and curved portion generated about a center that is spaced apart and not necessarily parallel to the axis, the second curved portion defining an edge reducing a static insertion profile area of the cutting structure, the cutting structure having a dynamic profile area generated upon rotation, both static insertion and dynamic profile areas lying transverse to the axis, wherein the edge defined by the second curved portion reduces the static insertion profile area of the cutting structure such that the static insertion profile area is smaller than the dynamic profile area

- b) an alignment structure connected to the inside surface of the dome portion for detachably connecting the hollow dome to a drive mechanism.

2. (Withdrawn and Currently Amended) The reamer of claim 1 ~~further comprising a pair of first~~ wherein the at least two opposed first edge portions are curved portions that are situated in opposed relationship to one another with respect to the shell.

3. (Withdrawn and Currently Amended) The reamer of claim 2 wherein the at least two pair of first curved portions intersect the theoretical equatorial plane and describe ~~describes a~~ diameter of the hollow dome ~~domed shell.~~

4. (Currently Amended) The reamer of claim 1 ~~further comprising a pair of~~ wherein the second curved portions ~~that are situated in~~ opposed to relationship from one another on opposite sides of the second theoretical plane ~~with respect to the shell.~~

5. (Withdrawn and Currently Amended) The reamer of claim 1 [[4]] wherein the at least two ~~pair of~~ second curved portions are [[is]] concave relative to the rotational axis.

6. (Currently Amended) The reamer of claim 1 [[4]] wherein the at least two ~~pair of~~ second curved portions are [[is]] convex relative to the rotational axis.

7. (Withdrawn and Currently Amended) The reamer of claim 1 [[4]] wherein the at least two ~~pair of~~ second curved portions ~~is~~ generally are circular or parabolic.

8. (Withdrawn and Currently Amended) The reamer of claim 1 ~~further comprising~~ there are a plurality of first curved portions and a plurality of second curved portions, and wherein the number of first curved portions equals the number of second curved portions.

9. (Withdrawn) The reamer of claim 8 wherein the number of first curved portions is 2 or 4.

10. (Withdrawn and Currently Amended) The reamer of claim 1 ~~further comprising~~ wherein there are a pair of first curved portions that are separated by a pair of second curved portions, together describing a cruciform shape.

11. to 16. (Cancelled)

17. (Withdrawn and Currently Amended) The reamer of claim 1 wherein ~~the~~ a dynamic profile area of the reamer is circular.

18. to 25. (Cancelled)

26. (Currently Amended) The reamer of claim 1 ~~[[19]]~~ wherein the alignment structure ~~further~~ comprises:

- a) a first bar having a first length extending to opposed terminal ends fixed at the base, including connected to the inner surface of the dome portion at locations along the second theoretical plane; and
- b) a cross-member having opposed free ends and being of a lesser length than the bar, the cross-member intersecting the bar at the axis to define a cruciform shape for receipt by a bayonet catch on a holder ~~the handle~~, while allowing removal of debris adjacent the free ends of the cross-member.

27. to 31. (Cancelled)

32. (Withdrawn and Currently Amended) The reamer of claim 1 ~~18~~ ~~further comprising a pair of second~~ wherein the at least two opposed second edge portions are curved portions that are situated in opposed relationship from one another with respect to the shell.

33. (Currently Amended) A surgical reaming assembly comprising:

- a) a hollow dome comprising:
 - i) a dome portion of a hemisphere extending from an apex to a lower edge, the dome portion being rotatable about a longitudinal axis that is perpendicular to a theoretical equatorial plane of the hemisphere and that passes through the apex of the dome portion, wherein the dome portion has an outer surface presenting multiple cutting sites comprising apertures suitable for passing debris into a cavity defined by an inner surface of the dome where the debris may accumulate;
 - ii) at least two opposed first edge portions of the lower edge residing on the theoretical equatorial plane, wherein a second theoretical plane intersects the dome portion along the longitudinal axis and along the first edge portions residing on the theoretical equatorial plane; and
 - iii) at least two second edge portions of the lower edge spaced from the theoretical equatorial plane toward the apex, wherein at least one of the second edge portions resides on opposite sides of the second theoretical plane with at least two of the second edge portions being disposed between and connected to two of the first edge portions; and
~~a hollow reamer body having a wall portion with an external surface, a pair of opposed base portions and an apex defining a cut axis, the opposed base portions separated by a curved portion generated about a center that is spaced~~

~~apart from the cut axis, the wall defining a central cavity and a plurality of passageways through the wall presenting cutting sites, the passageways communicating between the external surface of the wall and the central cavity for passage of removed bone and tissue through the wall into the central cavity;~~

- b) an alignment structure for detachably connecting the hollow dome to a drive mechanism, wherein the alignment structure comprises:
- i) a first bar having a first length extending to opposed first ends connected to the inner surface of the dome portion at locations along the second theoretical plane;
 - ii) a second bar bisecting the first bar, wherein the second bar has a second length extending to opposed second ends that reside intermediate the theoretical equatorial plane and the apex of the dome portion and that are spaced inwardly from the second edge portions of the dome; and
 - iii) wherein the first length of the first bar is greater than the second length of the second bar;
and
- c) a holder that is detachably connectable to the alignment structure for transmitting rotational torque to the hollow dome reamer body, for rotation of the reamer body about the cut axis; and an alignment structure provided on the body for assembly with the handle, including a first bar extending between the base portions and a second bar that intersects the first bar along the cut axis, wherein the second bar

~~further includes opposed free ends and has a shorter length than the first bar to allow removal of debris there around, the bars together forming a cruceiform shape allowing the bars to be assembled with the handle for controlled rotation of the reamer body.~~

34. (Withdrawn and Currently Amended) The assembly of claim 33 ~~further comprising wherein the hollow dome and the alignment structure comprise an acetabular reamer with the alignment structure, which that is detachably connectable to the holder attached to the handle by a bayonet catch.~~

35. to 38. (Cancelled)

39. (New) The reamer of claim 1 wherein the second theoretical plane bisects the dome portion along the first edge portions residing on the theoretical equatorial plane.

40. (New) The reamer of claim 1 wherein the alignment structure comprises:

- a) a first bar having a first length extending to opposed first ends connected to the inner surface of the dome portion at locations along the second theoretical plane;
- b) a second bar intersecting the first bar, wherein the second bar has a second length extending to opposed second ends that reside intermediate the theoretical equatorial plane and the apex of the dome portion and that are spaced inwardly from the second edge portions of the dome; and
- c) wherein the first length of the first bar is greater

than the second length of the second bar.

41. (New) The reamer of claim 1 wherein the first bar is aligned along the second theoretical plane and intersects the dome portion along the longitudinal axis and along the first edge portions residing on the theoretical equatorial plane.

42. (New) The reamer of claim 1 wherein the first bar is aligned along the second theoretical plane, intersecting the longitudinal axis and bisecting the first edge portions.

43. (New) The reamer of claim 1 wherein second bar intersects the first bar at a right angle.

44. (New) The reamer of claim 1 wherein the opposed ends of the first bar are connected to the inner surface of the dome portion at locations along the second theoretical plane and spaced from the theoretical equatorial plane toward the apex.

45. (New) The reamer of claim 1 wherein the second bar bisects the first bar.